

Make an Earth's Layer's Foldable[©]!

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NOTE: Please follow the directions carefully!

1. Color the four layers using this guide:

Inner Core - red

Outer Core - red-orange

Lower Mantle - orange

Middle Mantle - light orange

Upper Mantle - yellow

Oceanic Crust - dark brown

Continental Crust - light brown

Ocean - blue

2. Fill out the small squares with the information for each of the main layers of the Earth. Use your textbook or Earth's Layers Booklet.

3. Now you may cut out the layers! Also cut out the four squares and the 12 labels. Remember to cut out **The Earth's Layers** title.

4. Set one piece of blue paper in front of you. Closely trim the title. Paste **The Earth's Layers** title in the top left corner of the paper.

5. Paste the **Crust** right below the title, centered on the page.

6. Set the second piece of paper on top of the first, close to the bottom of the crust.

7. Paste the **Mantle** on the second piece of paper. Part of the blue will show near the brackets. That's okay! You can clip it out later.

8. Carefully lining up the sides of the blue papers, and holding tightly, fold up the bottom of both papers to about 1/4 inch below the bottom of the **Mantle**.

9. Staple the fold with two staples very close to the edge.

10. Paste the **Outer Core** on the next flap down.

11. Paste the **Inner Core** on the bottom flap. Paste the Inner Core Information Square to the left of the Inner Core.

12. Paste the three other squares inside the flaps, next to the corresponding Layers.

13. Cut out any of the blue flaps that show.

14. Using a black pen or marker, add the part of the Lithospheric bracket that was cut off.

15. Add two holes and write your name. **CONGRATULATIONS! YOU ARE DONE AND YOU ARE AMAZING!** Line up for points!

THE FOLDABLE[©] - See <http://www.dinah.com>

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Earth's Layers FOLDABLE®

Question Sheet

Name _____ Block _____

Directions: Use your Earth's Layers FOLDABLE® to answer these questions.
You may also need to use your textbook.

1. The planet we call Earth has how many main layers? _____

Write them in order from the center to the outside of the planet.

2. Use your FOLDABLE to answer these questions:

Name the thickest layer _____

Name the thinnest layer _____

Write as a fraction the relationship of the thinnest layer to the thickest layer. Show your work!

Challenge: Perhaps you have imagined digging a tunnel through the earth that comes out the other side. Figure it out ... How many kilometers would you have to dig? Show your work!

3. Write 4 interesting facts about the Earth's Crust.

- a. _____
- b. _____
- c. _____
- d. _____

4. The crust and the upper layer of the mantle together make up a zone of rigid, brittle rock called _____.

5. Write three amazing facts about the Mantle.

- a. _____
- b. _____
- c. _____

6. What are the Convection Currents? _____

7. Name two metals found in the Outer Core. _____ and _____

The border between the Outer core and the Inner Core is how many kilometers beneath the crust? _____

8. The Inner core is under so much pressure it does not move like a liquid, it _____

Write the temperature of the center of the Earth. _____

9. Why is the Inner Core a solid if it is the hottest layer? How is that possible?

10. What is the difference between the **continental** crust and the **oceanic** crust. List two differences.

Continental Crust

Oceanic Crust

Inside the Earth

The Earth is made of many different and distinct layers. The deeper layers are composed of heavier materials; they are hotter, denser and under much greater pressure than the outer layers.

Core: The Earth has a iron-nickel core that is about 2,100 miles in radius. The inner core may have a temperature up to about 13,000°F (7,200°C = 7,500 K), which is hotter than the surface of the Sun. The inner core (which has a radius of about 750 miles (1,228 km) is solid. The outer core is in a liquid state and is about 1,400 miles (2,260 km) thick.

Mantle: Under the crust is the rocky mantle, which is composed of silicon, oxygen, magnesium, iron, aluminum, and calcium. The upper mantle is rigid and is part of the **lithosphere** (together with the crust). The lower mantle flows slowly, at a rate of a few centimeters per year. The **asthenosphere** is a part of the upper mantle that exhibits plastic properties. It is located below the lithosphere (the crust and upper mantle), between about 100 and 250 kilometers deep.

Convection (heat) currents carry heat from the hot inner mantle to the cooler outer mantle. The mantle is about 1,700 miles (2,750 km) thick. The mantle gets warmer with depth; the top of the mantle is about 1,600° F (870° C); towards the bottom of the mantle, the temperature is about 4,000-6,700° F (2,200-3,700° C). The mantle contains most of the mass of the Earth. The Gutenberg discontinuity separates the outer core and the mantle.

Surface and crust: The Earth's surface is composed mostly of water, basalt and granite. Oceans cover about 70% of Earth's surface. These oceans are up to 3.7 km deep. The Earth's thin, rocky crust is composed of silicon, aluminum, calcium, sodium and potassium. For a [page on soil](#), [click here](#).

The crust is divided into continental plates which drift slowly (only a few centimeters each year) atop the less rigid mantle. The crust is thinner under the oceans (6-11 km thick); this is where new crust is formed. Continental crust is about 25-90 km thick. The lithosphere is defined as the crust and the upper mantle, a rigid layer about 100-200 km thick. The Mohorovicic discontinuity is the separation between the crust and the upper mantle.

